ASBESTOS IN NATURAL OUTCROPS OF SERPENTINE

Robert G. Coleman, *Department of Geological and Environmental Sciences, Stanford University, Stanford, California 94305*

There is no scientific consensus regarding health risks of exposure to asbestos at low levels found in the air around natural serpentine rock. In the San Francisco Bay area there are significant tracts of naturally occurring asbestos-bearing serpentine. These tracts are present in residential areas, recreational parks, underlay school yards or reservoirs and occupy significant tracts of land under control of local, state, and federal governments. It is unknown if there is a real health risk from exposure to asbestos fibers at the low levels found in these serpentine tracts. There has been no systematic evaluation of the health risks related to exposure of asbestos fibers released from these naturally occurring serpentine tracts in the San Francisco Bay Area. To characterize these serpentine tracts systematic geologic mapping should be done at a scale useful for realistic site assessment. Grid sampling of the serpentine mapped areas should be used to establish distribution and concentrations of the asbestos mineral species in rock, soils and water. Laboratory analyses would identify the asbestos mineral species along with estimates of fibers that might be released by crushing or pulverization. Stationary or personal air monitors can be used to guesstimate the amount of asbestos fiber in the air mass above the serpentine rock during construction (excavation). There is no medical or statistical consensus regarding a safe threshold for asbestos fibers at low levels or intermittent exposure around natural or disturbed serpentine. Realistic risk assessments are still needed that utilize new mineralogical, geological, and epidemiological data. Those San Francisco Bay cities and/or counties that have significant exposures of serpentine need to survey its extent and establish prudent laws for serpentine land development.